

REMARKS

In view of the following remarks, Applicant respectfully requests reconsideration and allowance of the subject application. This amendment is believed to be fully responsive to all issues raised in the Office Action mailed

5 October 3, 2003.

Claim Rejections

Rejections Under 35 U.S.C. §102

Claims 1-7, 9-18, and 20 were rejected under 35 U.S.C. §102(e) as
10 being anticipated by U.S. Patent No. 6,601,187 to Sicola, et al. (hereinafter, "the '187 patent"). Applicant traverses this rejection.

The '187 patent cannot anticipate (or render obvious) independent claim 1 because the '187 patent neither discloses (nor suggests) limitations explicitly recited in independent claim 1. Claim 1 explicitly recites "detecting
15 *with the host bus adapter* a failover condition" and "operating *the host bus adapter* to match the failover condition to a particular failover action in a failover rule set." The Action asserts that the '187 patent discloses this limitation, and cites Fig. 3, elements 308, 103A, 103B, 201, 202, 211, and 212 as disclosing the host bus adapter. The action further cites the disclosure of column 9, line 9
20 through column 10, line 63 and column 13, line 45 through column 14, line 16 to support the rejection. Applicant disagrees.

The '187 patent clearly describes that the failover functionality is implemented in the array controllers 201/202 and 211/212 that are connected to
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the storage arrays 203/213, respectively. The software architecture of the '187 patent is discussed primarily at column 9, lines 42-59, which reads as follows:

FIG. 5 is a block diagram showing exemplary array controller software architecture employed by the present system 100. As shown in FIG. 5, peer-to-peer remote copy software ('PPRC manager') 515 is layered in between host port initiator module 510 and VA ('Value Added', such as RAID and caching) software module 520 within each controller (A1/A2/B1/B2). VA layer 520 is not aware of any PPRC manager 515 context (state change or transfer path). Host port target code 505 allows only host initiators to connect to the controller port which is a dedicated data replication port.

The PPRC manager module 515 uses containers and services that the VA layer 520 exports. PPRC manager 515 uses interfaces between host port initiator module 510 and VA module 520 for signaling, transfer initiation, and transfer completions. PPRC manager 515 is responsible for managing functions including initiating the connection and heartbeat with the remote controller and initiating the remote copy for incoming host writes (via host port initiator 510); initiating I/O operations for performing full copy, log, and merge; handling error recovery (link failover) and peer communication; and maintaining state information. Device Services layer 525 handles the physical I/O to external devices including the local data storage array and switch.

Nothing in this text discloses (or even suggests) detecting a failover condition with a host bus adapter, or operating a host bus adapter to match a failover condition, as explicitly recited in claim 1. To the contrary, this text explicitly describes that failover operations are executed in the *controllers*, not in the host bus adapters. Therefore, the '187 patent cannot anticipate independent claim 1.

Applicant notes that claims 2-8 depend from independent claim 1, and are allowable by virtue of their dependency. Accordingly, the rejection of claims 2-8 is traversed. Applicant specifically traverses the assertion in the Action that **claim 5** is anticipated by inherency. Initially, claim 5 specifically recites

5 "determining *with the host bus adapter* if all active paths have failed and if all active paths determined failed, skipping the failover action performing *when the host bus adapter determines* either all other available paths have failed or a standby path is marked as unusable." As noted above, the '187 patent describes that failure detection and failover operations are performed in the

10 controllers, not in the host bus adapter. Accordingly, the '187 patent cannot anticipate claim 5, explicitly or by inherency.

Applicant notes that claims 6 and 7 each recite performing specific operations with a host bus adapter. For the same reasons applied to claim 1, the '187 patent cannot anticipate these claims.

15 The '187 patent cannot anticipate (or render obvious) independent claim 9 because the '187 patent neither discloses (nor suggests) limitations explicitly recited in independent claim 9. Independent claim 9 is directed to *a host bus adapter* that comprises "a failover mechanism detecting a redundancy failure in the data storage system and in response, initiating failover actions." The Action

20 cites the same sections of the '187 patent to support the rejection. As noted above, nothing in the '187 patent discloses implementing failure detection or failover procedures in a host bus adapter. Accordingly, the '187 patent cannot anticipate (or render obvious) claim 9.

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Applicant notes that claims 10-13 depend from independent claim 9, and are allowable by virtue of their dependency. Accordingly, the rejection of claims 10-13 is traversed. In addition, each of claims 10-13 recite specific failure detection and failover operations implemented in a host bus adapter. As noted
5 above, the '187 patent describes that failure detection and failover operations are performed in the controllers, not in the host bus adapter. Accordingly, the '187 patent cannot anticipate claims 10-13.

Similarly, the '187 patent cannot anticipate (or render obvious) independent claim 14 because the '187 patent neither discloses (nor suggests)
10 limitations explicitly recited in independent claim 14. Independent claim 14 is directed to a data storage system that includes "*a host bus adapter . . . configured to initiate a failover action selected from a set of failover actions.*" The Action cites the same sections of the '187 patent to support the rejection. As noted above, nothing in the '187 patent discloses implementing failure
15 detection or failover procedures in a host bus adapter. Accordingly, the '187 patent cannot anticipate (or render obvious) claim 14.

Applicant notes that claims 15-18 and 20 depend from independent claim 14, and are allowable by virtue of their dependency. Accordingly, the rejection of claims 15-18 and 20 is traversed. In addition, each of claims 15-18 and 20
20 recite, either directly or by way of dependency, specific failure detection and failover operations implemented in a host bus adapter. As noted above, the '187 patent describes that failure detection and failover operations are performed in the controllers, not in the host bus adapter. Accordingly, the '187 patent cannot anticipate claims 15-18 and 20.

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Rejections Under 35 U.S.C. §103

Claims 8 and 19 were rejected under 35 U.S.C. §103(a) as being unpatentable over the '187 patent. Applicant respectfully traverses these rejections.

5 Applicant submits these rejections are improper because the '187 patent is not available as prior art against the pending claims pursuant to the exception provided by 35 U.S.C. §103(c). The '187 patent qualifies as prior art only under 35 U.S.C. §102(e). In addition, this application was filed after November 29, 1999, and therefore is eligible for the exception provided by 35 U.S.C. §103(c).

10 The application that issued as the '187 patent was initially assigned to Compaq Information Technologies Group, L.P. Similarly, this application was also assigned to Compaq Information Technologies Group, L.P. Hence at the time of the invention, this application and the application that issued as the '187 patent were owned by, or subject to an assignment to, the same person.

15 Hewlett Packard purchased all assets of Compaq Corporation in 2002. Accordingly, this application and the '187 patent are still owned by, or subject to an assignment, to the same person. Therefore, the '187 patent is not available as prior art for the purposes of a rejection under 35 U.S.C. §103. (See, MPEP 706.02(I)(1)), and these rejections should be withdrawn.

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CONCLUSION

Claims 1-20 are in believed to be in condition for allowance. Applicant respectfully requests reconsideration and prompt issuance of the present application. Should any issue remain that prevents immediate issuance of the application, the Examiner is encouraged to contact the undersigned attorney to discuss the unresolved issue.

Respectfully Submitted,
Jed W. Caven

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Jed W. Caven
Lee & Hayes, LLP
Reg. No. 40,551
(303) 539-0265 x 246

Direct correspondence to:
Hewlett-Packard Company
Intellectual Property Administration
P.O. Box 272400
Fort Collins, CO 80527-2400

Lee & Hayes, PLLC

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